UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CENTRAL REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

Print Date: 11/27/02

Subject: Review of Region 5 Data for Himco Dump

From: Richard Dilg, Chemist
Contractor to Region 5 Central Regional Laboratory
Submitted to CRL on 12-4-02

To: Superfund, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

Attached are Results for: Himco Dump

Analyses included in this report:

B ICP (W)

Metals SF ICP (W)

Sylvia Griffin DEC 04 2002

Data Management Coordinator and Date Received

Date Transmitted: DEC 04 2002

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at 3-7444 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
ML-10C

_____ / ____ / _____

Received by and Date

Comments:

B ICP (W)
Metals SF ICP (W)

Method Number: CRL METALS 003 & METALS 025
Date Generated: November 27, 2002
Author: R.Dilg, IITRI-ESAT

Site Name: Himco Dump
Task Order Number: 05-0-02
TDF Number: 5-02-081
Job No.: 102-054 -001
Batch ID No.: E2K0101
Parameter: ICP

11-27-02

ICP NARRATIVE

This narrative covers the analysis of 4 water samples from the named site sampled for ICP metals analysis.

For a listing of sample ID's, laboratory ID's, and sampling dates refer to the Work Order pages and/or the initial LIMS report pages where such listings can be found.

The samples were received properly preserved. Routine CRL hot block (water) digestion procedures (CRL Metals 003 and Metals 025) were used to prepare the water samples for GFAA and ICP analysis. The digested samples were analyzed using the Optima 3300 DV ICP unit using analysis run method water_080300_m_ESAT. Optima 3300 DV ICP results were stored to files E2K0101 11222002.

ICP RUN RESULTS - WATERS

Analyte mdl's determined during late summer of 2001 and rl values calculated from that information for ESAT analysis work for the Optima 3300 DV were used. The calculated rl values were used in reporting sample analysis results for this data case.

Analysis RUN E2K0101- Optima 3300 DV

29 to 31 analyte lines out of a possible 78 lines available using the Optima 3300 DV method were chosen by a plan agreed upon by Dr. J. V. Morris. These are to be used for routine reporting of analyte values that appear in the QA summary reports.

The following analytes will either not be addressed or only minimally mentioned in this case narrative:

Sn, Tl, As, Se, Sb, Ce, Mo, Pb, Cd, B, Ti, Y, Sr, Li

Two sets of QA / QC summary reports are provided for each analysis run for this deliverable. The first is the traditional set based on "default" QA/ QC limits. The second set is based on control chart (historical / statistically) determined QA/ QC limits. The formats used for the second set are new and may be subject to change for use with future data sets.

Analysis RUN E2K0101 - Optima 3300 DV (continued)

The following lists the case pertinent out-of-control QC audit check results based on default QA / QC (traditional) limits:

RUN E2K0101 waters :

Blanks: (Blank values are truncated rather than rounded)

Instr blk1:	V 310	6.2	µg/L
Digest blk :	Ni231	0.8	"
	V 310	5.9	"
Instr blk2:	Cu327	- 2.0	"
	V 310	5.9	"
LCM's: LCM1 :	Ag328	*	
LCM1 (2):	Ag328	*	

* upper concentration level exceeded ; LCM2 check audits used for control purposes

Matrix spike: E2K0101-06:	Al396	#
(EK20401-MS1)	Ca315	#
	Fe259	#
	Fe273	#

audit not valid ; sample concentration greater than twice the spike concentration

RL check Soln: RL 1:

(See paragraph below regarding rl's)

RL 2:

Presently no "control" actions are associated with the observed RL analyte values actually determined during the analysis run. RL check solution values currently are being analyzed for purposes of generating a benchmark set of values which can be used to monitor the appropriateness of any given RL level of analyte concentration.

The following lists the case pertinent out-of-control QC audit check results based on control chart QA / QC (historical) limits. Only those analytes not already previously affected by default QA/ QC limits (see above) will be listed here:

(There is nothing pertinent to list.)

Analysis RUN E2K0101 - Optima 3300 DV (continued)

Sample analyte qualifications:

To date, compilation of control chart information is still on-going for some of the QA audits from Optima analysis runs. Until such time when compilation and evaluation of QA data is more complete, the following will be used:

Default QA/ QC limits for the digestion blank and instrument blank audits will be used for qualifying sample results. Control chart QA / QC limits and/or default limits for other QA/QC audit checks will be used to qualify sample results. In general, if the "wider" of either the default or the control chart limits is exceeded, then the reported results will be qualified for any given sample analyte result that may be affected. This latter approach has been discussed with Dr. J. V. Morris and it will be employed until a more consistent one is developed and spelled out in an approved SOP dealing with this matter.

As, Cd, Sb, Pb, Se, and Tl sample results were not reported by ICP; see GFAA results for these analytes.

The ICP sample results reported for the remaining analytes are usable except as noted in the following paragraphs.

For Ag, LCM2 QA check audits were used for control purposes rather than LCM1 check audits since the level of Ag in the LCM1 solutions exceed the upper linear limit for Ag.

For B, the sample results for E2K0101-02 is flagged "J" since it had a result between the MDL and the rl value and it is estimated because of this.

For Ca, the sample results for E2K0101-02 is flagged "J" since it had a result between the MDL and the rl value and it is estimated because of this.

For Cr, the sample results for E2K0101-02 and -05 are flagged "J" since they had a result between the MDL and the rl value and they are estimated because of this.

For Co, the sample results for E2K0101-04 and -05 are flagged "J" since they had a result between the MDL and the rl value and they are estimated because of this.

For Cu, the sample results for E2K0101-06 is flagged "J" since it had a result between the MDL and the rl value and it is estimated because of this.

For Ni, the sample result for E2K0101-02 is flagged "J" since it had a result between the MDL and the rl value and it is estimated because of this. The same result is also flagged "K" and may be biased high due to possible contamination indicated from blank audit results.

For Na, the sample result for E2K0101-02 is flagged "J" since it had a result between the MDL and the rl value and it is estimated because of this.

For V, the sample result for E2K0101-02 and -05 are flagged "J" since they had a result between the MDL and the rl value and they are estimated because of this. The same results and those for E2K0101-04 and -06 are also flagged "K" and may be biased high due to possible contamination indicated from blank audit results.

11-27-02

For Zn, the sample results for E2K0101-06 is flagged "J" since it had a result between the MDL and the rl value and it is estimated because of this.

Other comments

Samples E2K0101-04 and -05 appear to be field duplicates; analyte values for Cu, Fe, and Zn do not exhibit good correlation. No sample results were qualified on the basis of any field duplicate comparison results.

Sample E2K0101-02 is a field blank. Small amounts of B, Ca, Cr, Ni, Na, and V were reported. However, no analytes for the other samples were qualified on the basis of field blank results.

R5CRL Files

The following pathways were used for storing analysis information to the R5CRL file server for the this data set:

Optima 3300 DV results:

(Vol2 on 'R5crl')[H:] \IITRI-Metals \Rdilg \E2K0101 \Icp \Optima 3300DV \Methods_ESAT
(Vol2 on 'R5crl')[H:] \IITRI-Metals \Rdilg \E2K0101 \Icp \Optima 3300DV \narrative
(Vol2 on 'R5crl')[H:] \IITRI-Metals \Rdilg \E2K0101 \Icp \Optima 3300DV \Results_ESAT
(Vol2 on 'R5crl')[H:] \IITRI-Metals \Rdilg \E2K0101 \Icp \Optima 3300DV \SIFs_ESAT
(Vol2 on 'R5crl')[H:] \IITRI-Metals \Rdilg \E2K0101 \Icp \Optima 3300DV \SS processed data

IITRI
IIT RESEARCH INSTITUTE

IIT Research Institute ESAT Region 5
536 South Clark Street, Suite 734; Chicago, IL 60605
Telephone (312) 353-8302 Facsimile (312) 353-8307

Superfund, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Himco Dump Project Number: 2003SY01 Project Manager: Howard Pham	**Reported:** Dec-04-02 08:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
2003SY01R02-Pump Blank	E2K0101-02	Water	Oct-31-02 11:50	Nov-01-02 11:27
2003SY01S04-WT116A	E2K0101-04	Water	Oct-31-02 13:52	Nov-01-02 11:27
2003SY01D04-WT116A	E2K0101-05	Water	Oct-31-02 13:52	Nov-01-02 11:27
2003SY01S05-WT115A	E2K0101-06	Water	Oct-31-02 15:00	Nov-01-02 11:27

000037

12-4-02

Richard Dilg, Chemist

IITRI
IIT RESEARCH INSTITUTE

IIT Research Institute ESAT Region 5
536 South Clark Street, Suite 734; Chicago, IL 60605
Telephone (312) 353-8302 Facsimile (312) 353-8307

Superfund, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Himco Dump Project Number: 2003SY01 Project Manager: Howard Pham	**Reported:** Dec-04-02 08:13

2003SY01R02-Pump Blank
E2K0101-02(Water)
Sampled: Oct-31-02 11:50
Received: Nov-01-02 11:27

Metals by ICP

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	U		13.0	44.0	ug/L	1	EK20401	Nov-12-02	Nov-22-02
Barium	U		0.3	0.9	"	"	"	"	"
Beryllium	U		1.0	2.8	"	"	"	"	"
Iron	U		23.0	78.0	"	"	"	"	"
Calcium	42.1	J	24.0	82.0	"	"	"	"	"
Chromium	0.7	J	0.3	0.9	"	"	"	"	"
Cobalt	U		1.2	4.2	"	"	"	"	"
Copper	U		1.3	4.4	"	"	"	"	"
Iron	U		12.0	42.0	"	"	"	"	"
Magnesium	U		37.0	128	"	"	"	"	"
Manganese	U		2.5	8.6	"	"	"	"	"
Nickel	1.0	J, K	0.8	2.7	"	"	"	"	"
Potassium	U		140	482	"	"	"	"	"
Silver	U		0.5	1.7	"	"	"	"	"
Sodium	131	J	110	370	"	"	"	"	"
Vanadium	5.4	J, K	4.8	17.0	"	"	"	"	"
Zinc	U		10.0	36.0	"	"	"	"	"

IITRI
IIT RESEARCH INSTITUTE

IIT Research Institute ESAT Region 5
536 South Clark Street, Suite 734; Chicago, IL 60605
Telephone (312) 353-8302 Facsimile (312) 353-8307

Superfund, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Himco Dump Project Number: 2003SY01 Project Manager: Howard Pham	**Reported:** Dec-04-02 08:13

2003SY01S04-WT116A
E2K0101-04(Water)
Sampled: Oct-31-02 13:52
Received: Nov-01-02 11:27

Metals by ICP

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	**294**		13.0	44.0	ug/L	1	EK20401	Nov-12-02	Nov-22-02
Barium	**118**		0.3	0.9	"	"	"	"	"
Beryllium	**U**		1.0	2.8	"	"	"	"	"
Boron	**548**		23.0	78.0	"	"	"	"	"
Calcium	**564000**		24.0	82.0	"	"	"	"	"
Chromium	**1.2**		0.3	0.9	"	"	"	"	"
Cobalt	**2.1**	J	1.2	4.2	"	"	"	"	"
Copper	**13.6**		1.3	4.4	"	"	"	"	"
Iron	**5320**		12.0	42.0	"	"	"	"	"
Magnesium	**36700**		37.0	128	"	"	"	"	"
Manganese	**443**		2.5	8.6	"	"	"	"	"
Nickel	**8.2**		0.8	2.7	"	"	"	"	"
Potassium	**22200**		140	482	"	"	"	"	"
Silver	**U**		0.5	1.7	"	"	"	"	"
Sodium	**153000**		110	370	"	"	"	"	"
Vanadium	**9.9**	J, K	4.8	17.0	"	"	"	"	"
Zinc	**91.7**		10.0	36.0	"	"	"	"	"

Richard Dilg, Chemist 12-4-02

IITRI
IIT RESEARCH INSTITUTE

IIT Research Institute ESAT Region 5
536 South Clark Street, Suite 734; Chicago, IL 60605
Telephone (312) 353-8302 Facsimile (312) 353-8307

Superfund, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Himco Dump Project Number: 2003SY01 Project Manager: Howard Pham	**Reported:** Dec-04-02 08:13

2003SY01D04-WT116A
E2K0101-05(Water)
Sampled: Oct-31-02 13:52
Received: Nov-01-02 11:27

Metals by ICP

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	**301**		13.0	44.0	ug/L	1	EK20401	Nov-12-02	Nov-22-02
Barium	**125**		0.3	0.9	"	"	"	"	"
Beryllium	**U**		1.0	2.8	"	"	"	"	"
Iron	**558**		23.0	78.0	"	"	"	"	"
Calcium	**578000**		24.0	82.0	"	"	"	"	"
Chromium	**0.7**	J	0.3	0.9	"	"	"	"	"
Cobalt	**2.7**	J	1.2	4.2	"	"	"	"	"
Copper	**47.4**		1.3	4.4	"	"	"	"	"
Iron	**6170**		12.0	42.0	"	"	"	"	"
Magnesium	**37200**		37.0	128	"	"	"	"	"
Manganese	**453**		2.5	8.6	"	"	"	"	"
Nickel	**9.3**		0.8	2.7	"	"	"	"	"
Potassium	**22500**		140	482	"	"	"	"	"
Silver	**U**		0.5	1.7	"	"	"	"	"
Sodium	**157000**		110	370	"	"	"	"	"
Vanadium	**10.2**	J, K	4.8	17.0	"	"	"	"	"
Zinc	**218**		10.0	36.0	"	"	"	"	"

12-4-02

Richard Dilg, Chemist

IITRI
IIT RESEARCH INSTITUTE

IIT Research Institute ESAT Region 5
536 South Clark Street, Suite 734; Chicago, IL 60605
Telephone (312) 353-8302 Facsimile (312) 353-8307

Superfund, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Himco Dump Project Number: 2003SY01 Project Manager: Howard Pham	Reported: Dec-04-02 08:13

2003SY01S05-WT115A
E2K0101-06(Water)
Sampled: Oct-31-02 15:00
Received: Nov-01-02 11:27

Metals by ICP

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Aluminum	**4110**		13.0	44.0	ug/L	1	EK20401	Nov-12-02	Nov-22-02
Barium	**73.8**		0.3	0.9	"	"	"	"	"
Beryllium	**U**		1.0	2.8	"	"	"	"	"
Iron	**164**		23.0	78.0	"	"	"	"	"
Calcium	**359000**		24.0	82.0	"	"	"	"	"
Chromium	**5.7**		0.3	0.9	"	"	"	"	"
Cobalt	**U**		1.2	4.2	"	"	"	"	"
Copper	**2.1**	J	1.3	4.4	"	"	"	"	"
Iron	**3560**		12.0	42.0	"	"	"	"	"
Magnesium	**21800**		37.0	128	"	"	"	"	"
Manganese	**70.8**		2.5	8.6	"	"	"	"	"
Nickel	**8.4**		0.8	2.7	"	"	"	"	"
Potassium	**4130**		140	482	"	"	"	"	"
Silver	**U**		0.5	1.7	"	"	"	"	"
Sodium	**40800**		110	370	"	"	"	"	"
Vanadium	**17.9**	K	4.8	17.0	"	"	"	"	"
Zinc	**23.3**	J	10.0	36.0	"	"	"	"	"

12-4-02
Richard Dilg, Chemist

000041

IITRI
IIT RESEARCH INSTITUTE

IIT Research Institute ESAT Region 5
536 South Clark Street, Suite 734; Chicago, IL 60605
Telephone (312) 353-8302 Facsimile (312) 353-8307

Superfund, US EPA Region 5	Project: Himco Dump	
77 West Jackson Boulevard	Project Number: 2003SY01	**Reported:**
Chicago IL, 60604	Project Manager: Howard Pham	Dec-04-02 08:13

Notes and Definitions

#	Spike audit not valid. The sample concentration exceeds twice the concentration of the spike added. No qualification made for this QC audit.
< 5X	One or both concentration values for the duplicate analysis audit were less than 5 times the MRL value AND the difference between the two values was less than the MRL value. The duplicate audit is acceptable. No qualification made for this QC audit.
J	The identification of the analyte is acceptable; the reported value is an estimate.
K	The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
U	Not Detected
NR	Not Reported

12-4-02

Richard Dilg, Chemist